WHAT IS CLAIMED IS:

1. A process for producing ethanol from organic materials comprising the steps of:

providing an aqueous solution containing organic materials;

contacting said aqueous solution with a gas comprising ozone, said ozone being present in an amount sufficient to oxidize and break down at least a portion of said organic materials into a oxidized medium;

contacting said oxidized medium with microorganisms, said microorganisms consuming said oxidized medium in a cellular process to produce ethanol as a byproduct of said process; and

collecting said ethanol.

2. A process as defined in claim 1, wherein said organic materials comprise a material selected from the group consisting of a lignocellulosic material, a proteinaceous material, a carbohydrate, a chitin, and mixtures thereof.

3. A process as defined in claim 1, wherein said organic materials comprise animal waste.

4. A process as defined in claim 1, wherein said aqueous solution comprises a waste water.

5. A process as defined in claim 1, further comprising the step of reducing the size of said organic materials.

6. A process as defined in claim 1, wherein said ozone is contacted with said aqueous solution at a concentration of at least 0.01 ppm.

7. A process as defined in claim 1, wherein said aqueous solution is contacted with said ozone by flowing said aqueous solution through a venturi and feeding said ozone into said venturi.

8. A process as defined in claim 1, further comprising the steps of placing solid waste materials containing said organic materials into a porous container and circulating water through said porous container in order to form said aqueous solution.

9. A process as defined in claim 1, wherein said aqueous solution is contained in a slurry that is fed through an auger, said ozone being fed to said auger.

10. A process as defined in claim 1, wherein a pH modifier is added to said aqueous solution in order to adjust the pH of said solution.

11. A process as defined in claim 1, further comprising the step of separating out any solid materials contained in said solution prior to contacting said solution with said microorganisms.

12. A process as defined in claim 1, wherein said ozonated aqueous solution is contacted with said microorganisms in a packed tower.

13. A process as defined in claim 1, further comprising the step of separating said produced ethanol from said aqueous solution, said ethanol being separated from said aqueous solution through distillation.

14. A process as defined in claim 1, wherein said aqueous solution is cooled during contact with said ozone.

15. A process as defined in claim 14, further comprising the step of heating said solution after said solution is cooled.

16. A process as defined in claim 1, further comprising the step of converting said ethanol to a hydrocarbon gas by contacting said ethanol with a second microorganism.

17. A process as defined in claim 1, wherein said cellular process comprises respiration or photosynthesis.

18. A process as defined in claim 1, wherein said cellular process comprises fermentation.

19. A process as defined in claim 1, wherein said microorganism comprises an organism selected from the group consisting of Zymomonas mobilis, Saccharomyces cerevisiae, and mixtures thereof.

20. A process for producing useful products from organic materials comprising the steps of:

providing an aqueous solution containing organic materials;

contacting said aqueous solution with a gas comprising ozone, said ozone being contacted with said aqueous solution at a concentration of at least 0.01 ppm., said ozone being present in an amount sufficient to oxidize at least a portion of said organic materials into an oxidized medium;

contacting said ozonated aqueous solution with a material selected from the group consisting of an organism, an enzyme, and mixtures thereof for converting said oxidized medium into a metabolic product; and

collecting said product.

21. A process as defined in claim 20 wherein said product comprises an alcohol.

22. A process as defined in claim 20, wherein said product comprises organic acid.

23. A process as defined in claim 20, wherein said product comprises a vitamin.

24. A process as defined in claim 20, wherein said aqueous solution is contacted with said ozone by flowing said aqueous solution through a venturi and feeding said ozone into said venturi.

25. A process as defined in claim 20, wherein said ozonated aqueous solution is contacted with a plant and wherein said metabolic product comprises a pigment.

26. A process as defined in claim 25, wherein said plant comprises red algae.

27. A process as defined in claim 20, wherein said ozonated aqueous solution is contacted with a bacteria and wherein said metabolic product comprises a hydrocarbon gas.

28. A process as defined in claim 27, wherein said hydrocarbon gas comprises methane.

29. A process as defined in claim 27, wherein said bacteria comprises a bacteria chosen from the group of methanogenic bacteria and wherein said hydrocarbon gas comprises methane.

30. A process as defined in claim 21, further comprising the steps of:

contacting said alcohol with an organism for converting said alcohol into a hydrocarbon gas; and

collecting said hydrocarbon gas.

31. A process as defined in claim 30, wherein said hydrocarbon gas contains methane.

32. A process as defined in claim 31, wherein said ozonated aqueous solution is contacted with a material selected from the group consisting of a plant, a microorganism, and mixtures thereof to produce said alcohol, and wherein said microorganism used to produce said methane comprises a bacteria selected from the group of methanogenic bacteria.

33. A process as defined in claim 20, wherein said organic materials comprise food industry waste.

34. A process as defined in claim 20, wherein said organic materials comprise animal waste.

35. A process as defined in claim 20, wherein said organic materials comprise paper industry waste.

36. A process as defined in claim 20, wherein said organic materials comprise petroleum refining waste.

37. A process as defined in claim 20, wherein said organic materials comprise tire waste.

38. A process as defined in claim 20, wherein said organic materials comprise municipal solid waste.

39. A process as defined in claim 20, wherein said product comprises a material selected from the group consisting of aldehydes, ketones, alkanes, alkenes, alkynes, lipids, peroxides, and pigments.

40. A process as defined in claim 20, wherein said product comprises a beta glucan.

41. A process as defined in claim 20, wherein said product comprises polyhydroxybutyrate, polyhydroxyvalerate, or mixtures thereof.

42. A process as defined in claim 20, further comprising the step of feeding said ozonated aqueous solution to a plant system.

43. A process as defined in claim 42, wherein said aqueous solution is fed to said plant system after said product is separated from the aqueous solution.

44. A process for producing methane from waste materials comprising of steps of:

providing an aqueous solution containing organic compounds;

contacting said aqueous solution with a gas comprising ozone, said ozone being present in an amount sufficient to convert at least a portion of said organic compounds into an oxidized medium;

contacting said ozonated aqueous solution with microorganisms, said microorganisms converting said oxidized medium into methane; and

collecting said methane.

45. A process as defined in claim 44, wherein said aqueous solution is contacted with said ozone by flowing said aqueous solution through a venturi and feeding said ozone into said venturi.

46. A process as defined in claim 44, further comprising the steps of:

monitoring the amount of metabolizable substrates in said aqueous solution during ozonation; and

ozonating said aqueous solution until the amount of said metabolizable substrates detected begins to decrease.

47. A process as defined in claim 44, further comprising the steps of:

calculating a maximum amount of metablizable substrates that may be produced during ozonation of said aqueous solution based upon the amount and type of organic compounds contained in said solid waste materials; and

contacting said aqueous solution with ozone in an amount sufficient to produce at least said calculated maximum amount.

48. A process as defined in claim 46, wherein said metabolizable substrates comprise sugars.

49. A process for producing a useful product from waste materials comprising the steps of:

providing an aqueous solution containing organic materials;

contacting said aqueous solution with a gas comprising ozone, said ozone being present in an amount sufficient to oxidize and break down at least a portion of said organic materials into an oxidized medium;

drying and collecting said oxidized medium.

50. A process as defined in claim 49, wherein said oxidized medium comprises a fertilizer.

51. A process as defined in claim 49, further comprising the step of removing inorganic solid materials from said aqueous solution prior to collecting said oxidized medium.